



Application No.: 10/817,234
Amendment Date: August 16, 2005
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Listing of Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

What is claimed is:

1. **(Original)** A spool comprising: a hub sandwiched between two flanges, said hub containing at least one living hinge forming a cavity in a periphery of said hub, such that during the temperature variations between -40°C to 85°C .
 - (i) the outer surface circumference of said hub changes, thereby changing the size of the opening associated with said cavity during said temperature change; and
 - (ii) the outer surface diameter D_H of said hub remains substantially constant.
2. **(Original)** The spool according to claim 1, wherein said spool is made of aluminum.
3. **(Original)** The spool according to claim 1, wherein said spool is made of material with CTE of not less than $14 \mu\text{in}/\text{in }^{\circ}\text{C}$.
4. **(Original)** The spool according to claim 3, wherein said spool is made of material with CTE of not less than $20 \mu\text{in}/\text{in }^{\circ}\text{C}$.
5. **(Original)** The spool according to claim 1, wherein said spool is made of material with $\text{CTE} \times \text{Modulus}$ of less than 9×10^6 .
6. **(Original)** The spool according to claim 5 wherein said spool is made of material with $\text{CTE} \times \text{Modulus}$ of less than 6×10^6 .

7. **(Original)** A method for making a spool comprising the steps of:
- (i) forming a hub pipe with living hinge;
 - (ii) cutting off a required length l of this hub pipe, thereby producing a plastic hub of length l , the hub having at least one living a living hinge;
 - (iii) providing two flanges;
 - (iv) assembling the hub and the flanges into the spool.
8. **(Original)** The method according to claim 7, further including the step of winding fiber around said hub.
9. **(Original)** The method according to claim 7, wherein said step of providing two flanges includes (a) providing at least two flange preforms; and (b) trimming said preforms to a desired size, thereby producing a flanges of desired diameter.
10. **(Cancelled)**
11. **(Original)** The spool according to claim 1, wherein said angle θ is less than 10 degrees.
12. **(Original)** The spool according to claim 2, wherein said angle θ is less than 5 degrees.
13. **(Original)** The spool according to claim 2, wherein said angle θ is less than 3 degrees.
14. **(Original)** The spool according to claim 1, wherein said flange has a plurality of fiber grooves, each of said fiber grooves being characterized by a different bend radius

R_i, at least one of said fiber grooves extending at said shallow angle θ substantially to the outer edge of said flange.

15. **(Currently Amended)** The spool according to claim ~~14~~ 5, wherein said plurality of fiber grooves are semicircular and are characterized by different radii of curvature.

16. **(Currently Amended)** The spool according to claim 1, wherein at least one of said flanges has a fiber groove and said fiber groove allows the exiting fiber to reverse direction, so that fiber leads point in the same direction.

17. **(Currently Amended)** The spool according to claim ~~1~~ 7, wherein at least one of said flanges has a fiber groove and said flange with a fiber groove also contains a fiber underlaying groove.

18. **(Original)** The spool according to claim 1, wherein said flange includes at least two fiber grooves, one of said fiber grooves allows the exiting fiber to reverse direction, so that fiber leads point in the same direction, and another one of said fiber grooves allowing the fiber leads to point in opposing directions.

19. **(Original)** The spool according to claim 1, wherein said side of the flange with the fiber groove also contains a fiber underlaying groove.

20. **(Cancelled)**

21. **(Cancelled)**